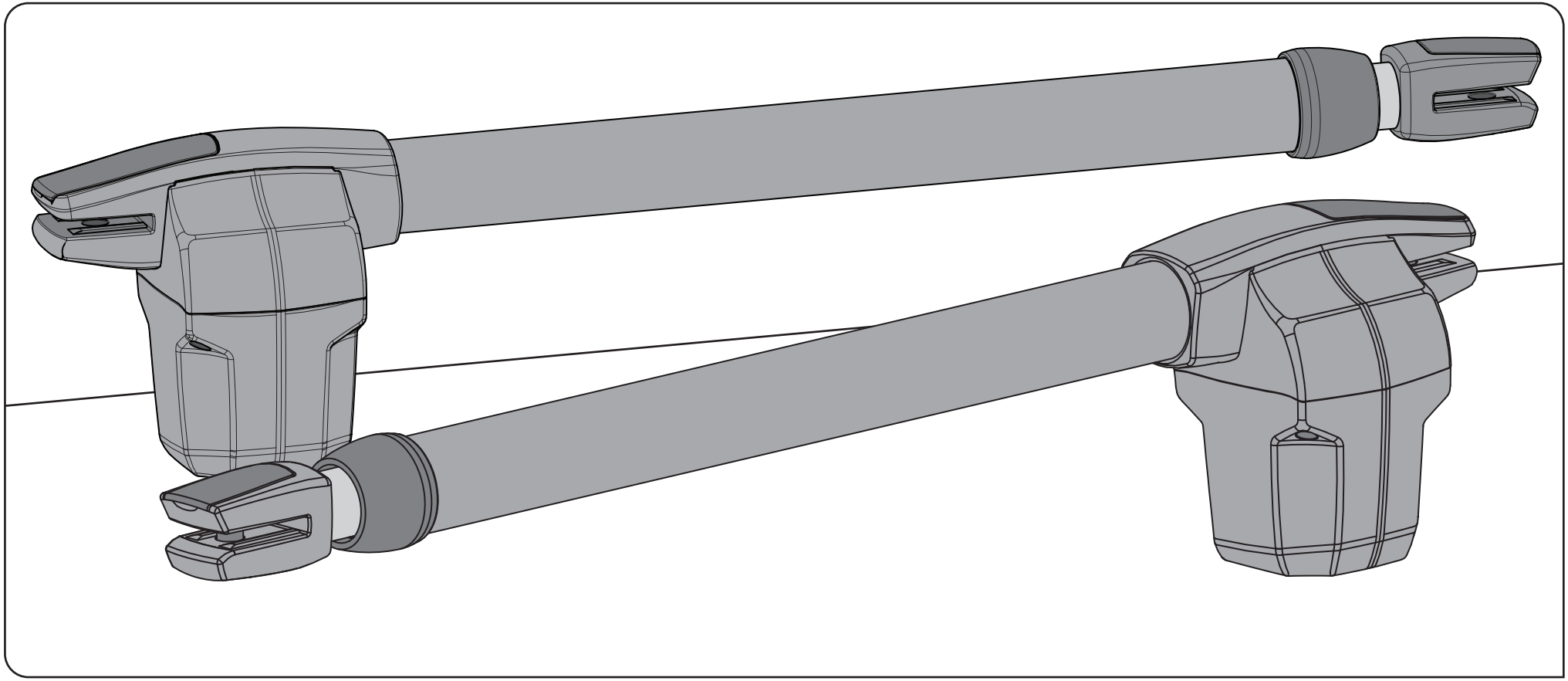
LINCE 300/400/600

User's and Intaller's manual

Motorline® PROFESSIONAL



v1.0
REV. 09/2013

00. CONTENT

▷ INDEX

00. CONTENT
- ▷ **Index** | page 01.A

01. SAFETY INSTRUCTIONS
- ▷ **Standards to follow** | page 01.B

02. PACKAGE
- ▷ **Inside package** | page 02.A

03. OPERATOR
- ▷ **Functionality** | page 02.B
- ▷ **Manual release** | page 03.B
- ▷ **Technical Specifications** | page 04.A

04. INSTALLATION
- ▷ **Installation dimensions** | page 04.B
- ▷ **Installation steps** | page 06.A
- ▷ **Installation map** | page 07.A

05. TROUBLESHOOTING
- ▷ **Final consumers instructions** | page 08.A
- ▷ **Instructions for specialized installers** | page 08.B

06. COMPONENTS TEST
- ▷ **Capacitors connection scheme** | page 09.A

07. MAINTENANCE
- ▷ **Maintenance** | page 09.B

08. CONTROL BOARD MC2
- ▷ **Connections Scheme** | page 09.B

01. SAFETY INSTRUCTIONS

STANDARDS TO FOLLOW ◁

ATTENTION:

▷ To ensure the safety of people, it is important that you read all the following instructions.Incorrect installation or incorrect use of the product can cause physical injury and material damage.

▷ Keep these instructions in a safe place for future reference.

▷ This product was designed and produced strictly for the use indicated in this manual. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger.

▷ **ELECTROCELOS SA** is not responsible for the improper use of the product, or other use than that for which it was designed.

▷ **ELECTROCELOS SA** is not responsible if safety standards were not taken into account when installing the equipment, or for any deformation that may occur to it.

▷ **ELECTROCELOS SA** is not responsible for the safety and proper operation when using components not sold by them.

▷ Do not make any modifications to the operator components and / or their accessories.

▷ Beffore installation unplug the automatism from the source of power.

▷ The installer must inform the client how to handle the product in case of emergency and provide this manual to user.

▷ Keep remote controls away from children, to prevent the automated system from being activated involuntarily.

▷ The customer shall not, under any circumstances, attempt to repair or tune the operator .Must call qualified technician only.

▷ Connect the automatism to a 230V plug with ground wire.

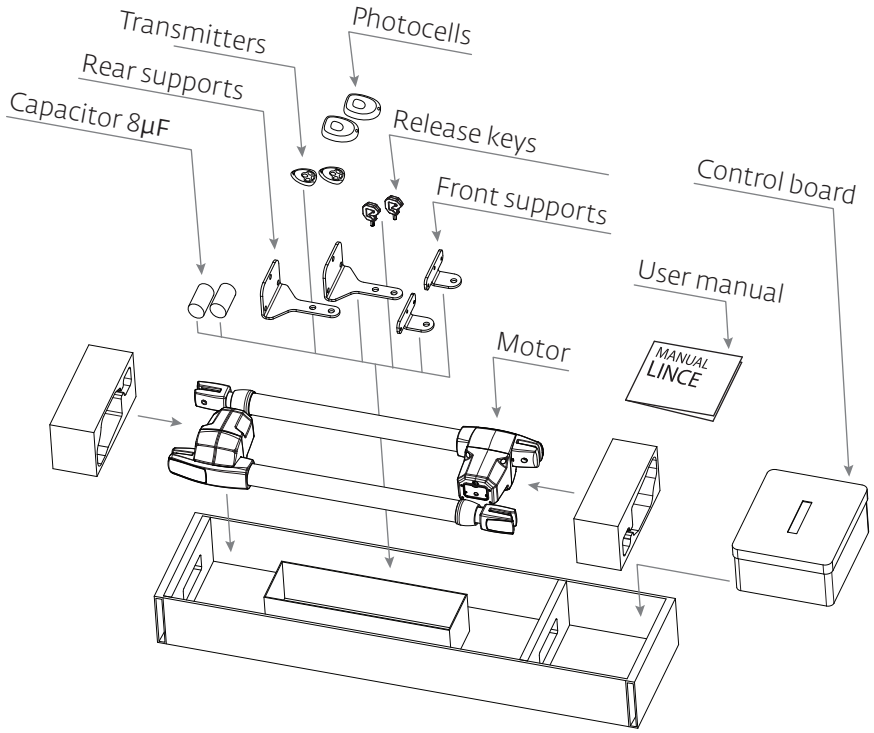
▷ Operator for outdoor and indoor use.

02. PACKAGE

▷ INSIDE PACKAGE

In the package you will find the following components:

- ▷ **02** Swing operators LINCE
- ▷ **01** Control Board
- ▷ **02** 4Channel transmitters
- ▷ **02** Front supports
- ▷ **02** Rear supports
- ▷ **02** Capacitors 8µF
- ▷ **01** Photocells
- ▷ **01** User's manual
- ▷ **02** Release keys

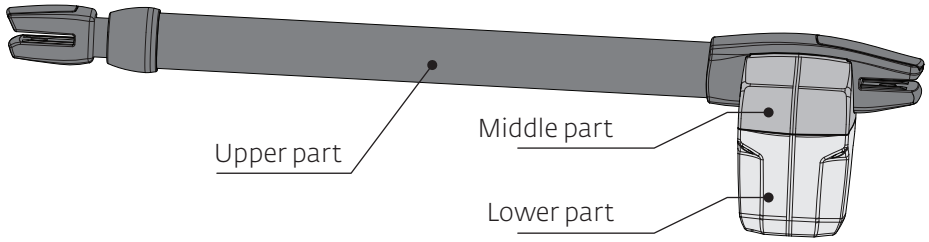


03. OPERATOR

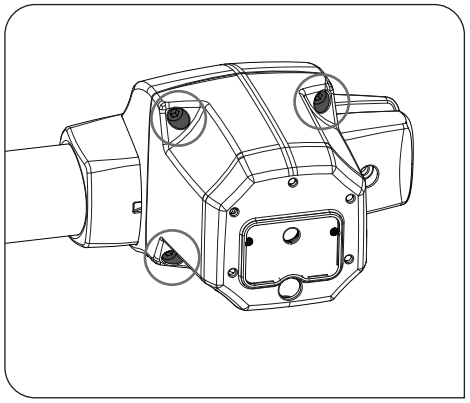
FUNCTIONALITY ◁

The operator LINCE, is a product developed exclusively for the automatic opening of swing gates.

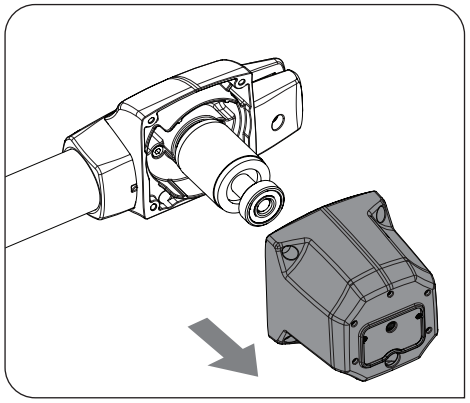
Besides being pratical, safe and powerful, this product has a new function incorporated so that you can transform a motor to apply on right leaves to left leaves. This allows greater flexibility in the use of each operator.



Motor disassembly and assembly process, in order to transform motor, must be done as follows:

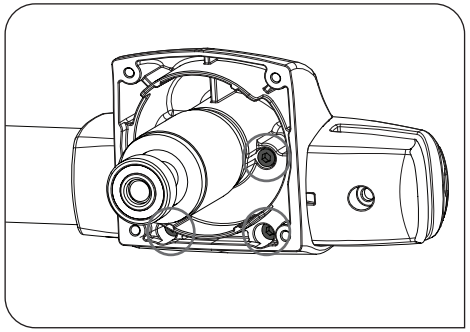


01 - Loosen the screws that secure the Lower Part to Middle Part

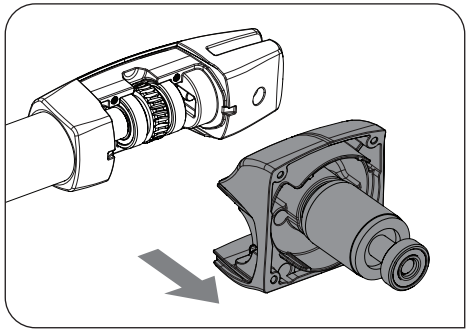


02 - Remove Lower Part

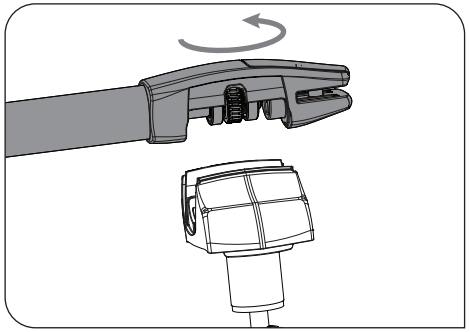
▷ FUNCTIONALITY



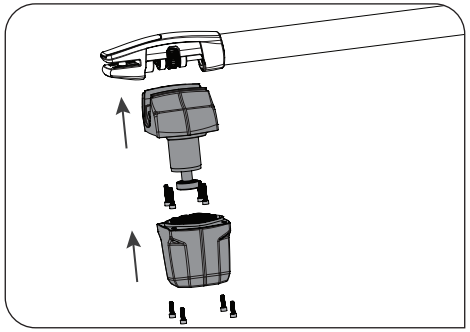
03 - Loosen the screws of the Middle Part



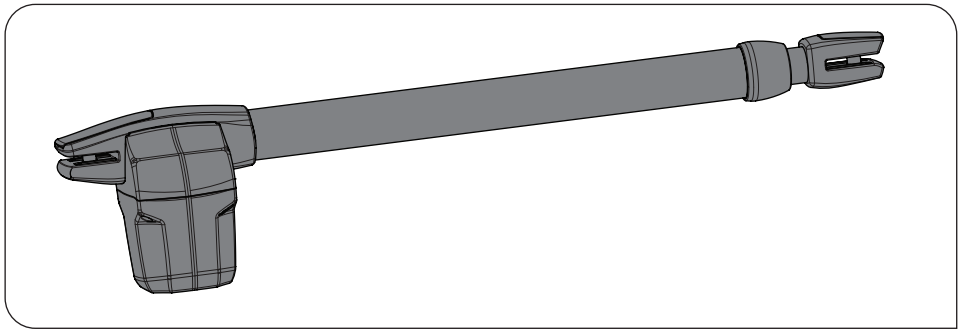
04 - Remove Middle Part



05 - Rotate Upper Part 180°



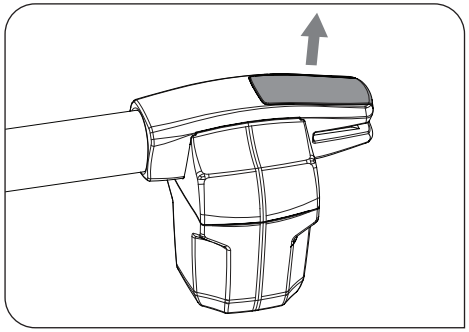
06 - Assemble operator by tightening all components with the screws



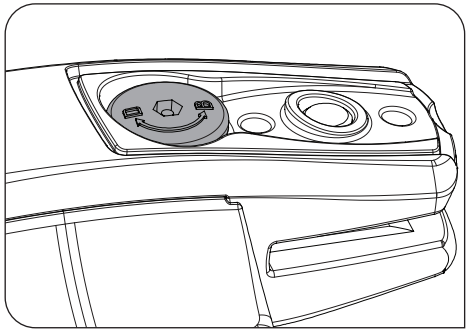
07 - Full transformed operator

03. OPERATOR

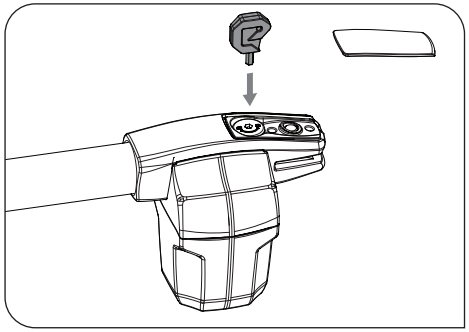
MANUAL RELEASE ◁



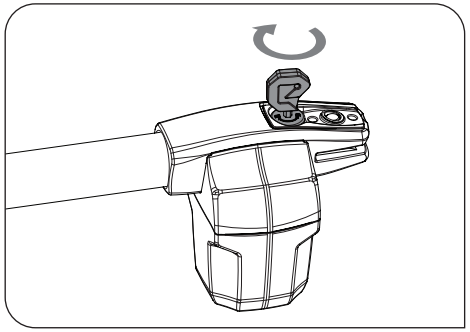
01 - Remove the plastic cap from the rear end



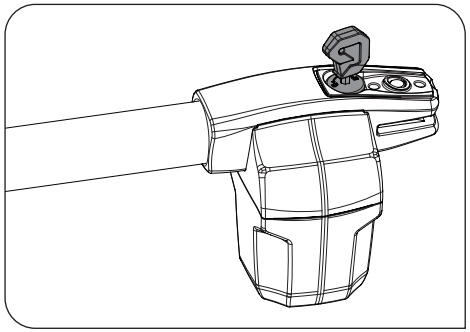
Information engraved on the unlock shaft
D=Unlock || **B**= Lock



02 - Insert Release key on the unlock shaft.



03 - Rotate key 180° in the direction indicated in the figure to unlock



04 - Operator unlocked.

Note: To lock operator so it can work automatically, must do it by turning the key anticlockwise.

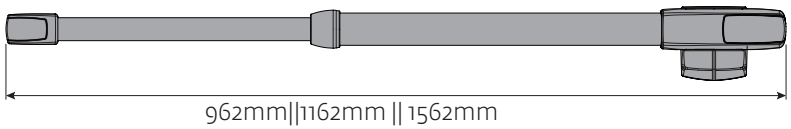
03. OPERATOR

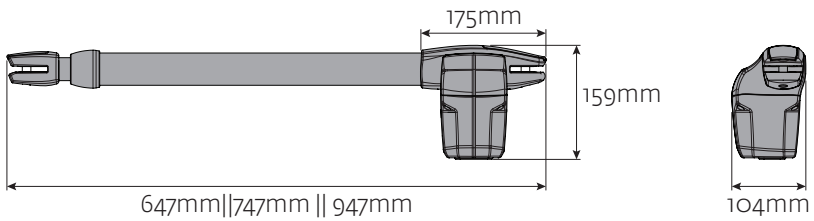
▷ TECHNICAL SPECIFICATIONS

LINCE specifications are as follow:

	LINCE300	LINCE400	LINCE600
▷ Power Supply	AC 230V 50/60Hz	AC 230V 50/60Hz	AC 230V 50/60Hz
▷ Power	180W	180W	180W
▷ Current	1,3A	1,3A	1,3A
▷ RPM	1400 RPM	1400 RPM	1400 RPM
▷ Noise level	<50dB	<50dB	<50dB
▷ Force	2300N	2300N	2300N
▷ Operating temperatures	-25°C a 75°C	-25°C a 75°C	-25°C a 75°C
▷ Thermal protection	120°C	120°C	120°C
▷ Protection class	IP54	IP54	IP54
▷ Working frequence	25%	25%	25%
▷ Course	300mm	400mm	600mm
▷ Max leaf lenght	2500mm	3000mm	4000mm

LINCE 300||400 || 600 dimensions are the following:

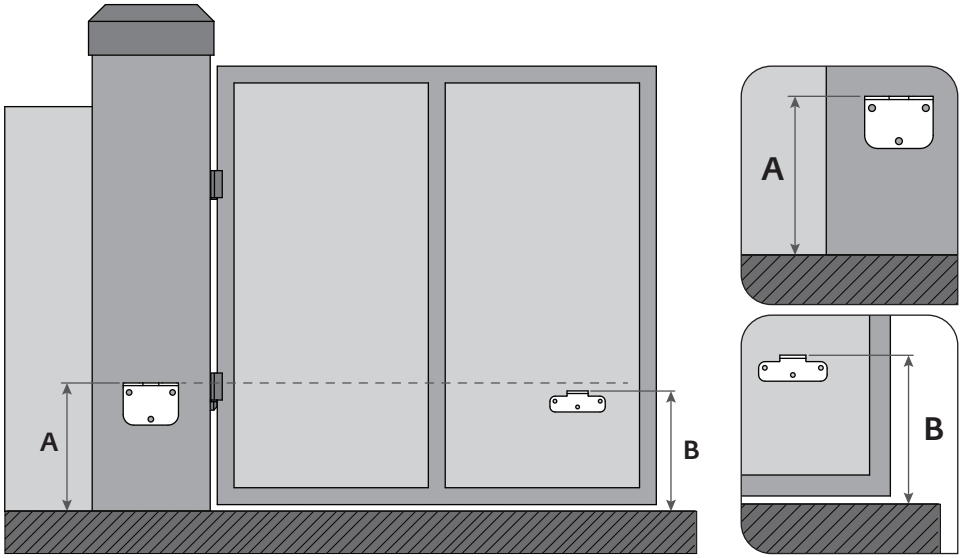




04. INSTALLATION

VERTICAL INSTALLATION DIMENSIONS ◁

The operator **LINCE** must be installed with a small inclination , to prevent water infiltration through the extension arm.
For this, the front support must be fixed to the gate with a height lower than the height of the rear support. See example below:



Dimension A - *Vertical distance* from the floor to the top of the rear support .
Dimension B - *Vertical distance* from the floor to the top of the front support.

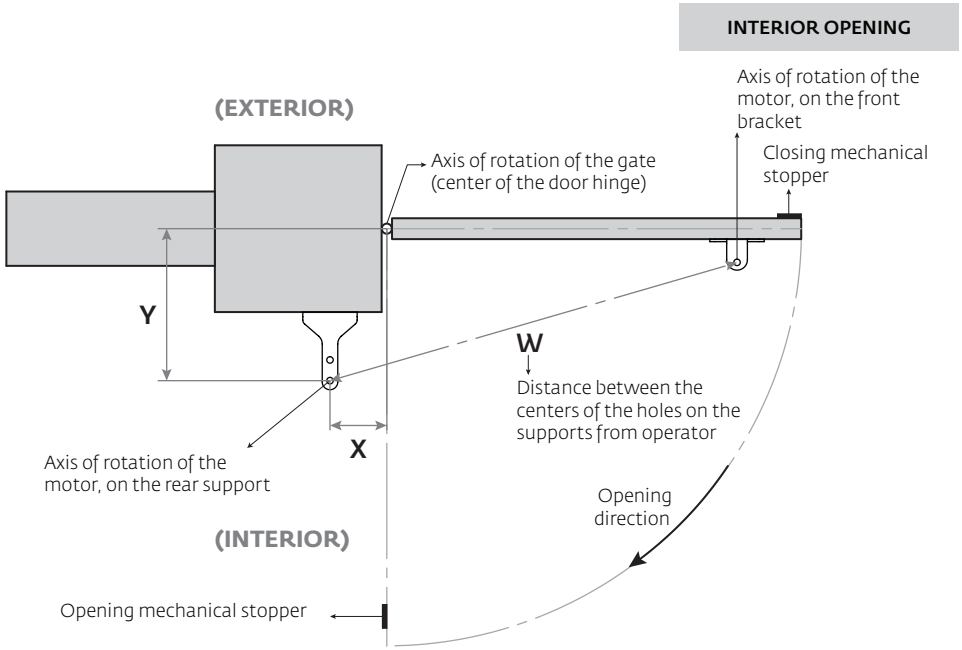
A =	**?** mm	- Set **dimension A** (this can be any size of your choice).
B =	**A** - 10mm	- After you set **dimension A**, subtract **10mm** to find **dimension B**.

Example:
▷ If the height of the rear bracket (**dimension A**) is set at 600 mm, then the height of the front bracket (**dimension B**) will be 590 mm (600mm-10mm).

It is very important that these dimensions are respected! Only this way can be assured the correct functioning and durability of the operators!
It is also very important to have a levelled ground/terrain!

▷ HORIZONTAL INSTALLATION DIMENSIONS

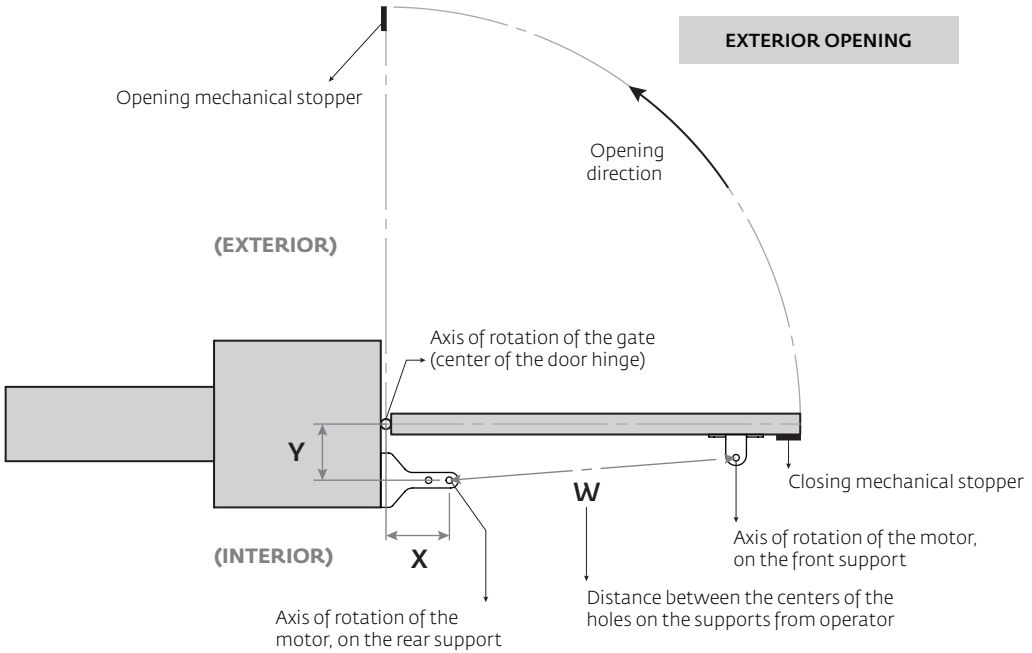
On the Illustrated diagrams below and on the next page, are the horizontal dimensions for the installation of the automated system.


INTERIOR OPENING
(EXTERIOR)
Axis of rotation of the motor, on the front bracket
Closing mechanical stopper
Axis of rotation of the gate (center of the door hinge)
Y
W
Distance between the centers of the holes on the supports from operator
X
Axis of rotation of the motor, on the rear support
Opening direction
(INTERIOR)
Opening mechanical stopper

	Opening angle	X	Y	W
▷ LINCE300	95°	100 a 150	100 a 140	895 a 900
▷ LINCE400	95°	120 a 180	120 a 180	1095 a 1100
	120°	160 a 180	120 a 140	1095 a 1100
▷ LINCE600	95°	120 a 350	120 a 200	1495 a 1500
	120°	200 a 280	120 a 200	1495 a 1500

It is very important that these dimensions are respected! Only this way can be assured the correct functioning and durability of the operators!

HORIZONTAL INSTALLATION DIMENSIONS ◁


EXTERIOR OPENING
Opening mechanical stopper
Opening direction
(EXTERIOR)
Axis of rotation of the gate (center of the door hinge)
Y
W
Closing mechanical stopper
Axis of rotation of the motor, on the front support
(INTERIOR)
X
Distance between the centers of the holes on the supports from operator
Axis of rotation of the motor, on the rear support

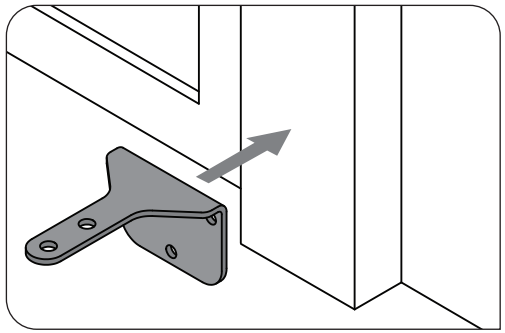
	Opening angle	X	Y	W
▷ LINCE300	95°	130 a 140	130 a 150	600 a 605
▷ LINCE400	95°	160 a 200	120 a 180	695 a 700
▷ LINCE600	95°	160 a 300	120 a 280	900 a 905

LEGEND:

Dimension X - Horizontal distance between hinge axis of the door and the rear axle of the motor.
Dimension Y - Vertical distance between hinge axis of the door and the rear axle of the motor.
Dimension W - Distance between axis of the motor brackets

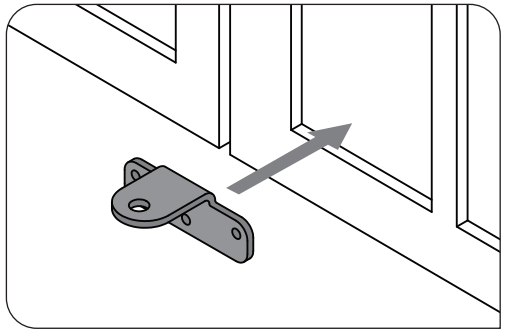
▷ INSTALLATION STEPS

⚠ Pay attention to installation dimensions mentioned on pages 04.B, 05.A and 05.B!



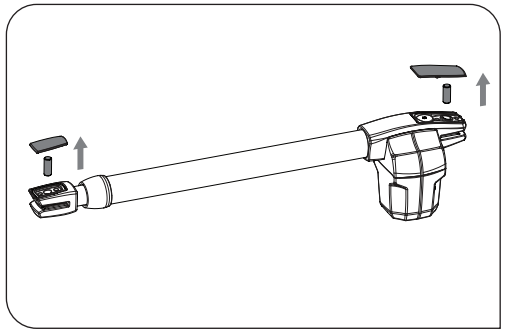
01 - Fixing rear support

▷ The **Rear support** must be fixed to the pillar or wall using dimensions provided in the preceding pages.
It can be fixed using screws with mechanical bushing or chemical welding process, or one of your choice since it provides an appropriate support.



02 - Fixing front support

▷ The **Front support** should be fixed to the gate, respecting height dimensions and distance to the rear support.
This may be fixed by using screws, welding process, or to choose another long as it provides a secure proper support.

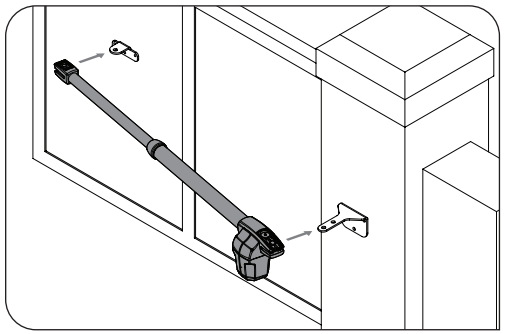


03 - Remove caps and pins from motor

▷ Before installing motor, remove caps and pins from motor.

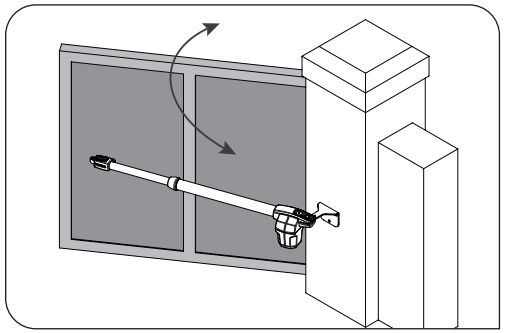
▷ At the end of the installation, put back plastic covers for a better visual finish of the operator.

INSTALLATION STEPS ◁



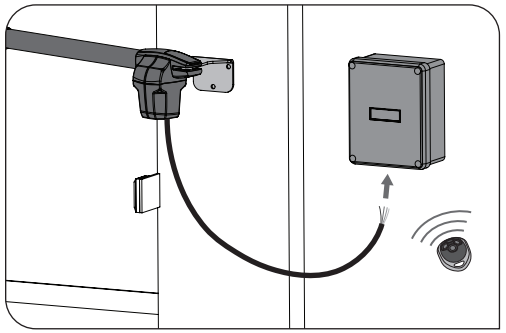
04 - Install operator on the supports

▷ The operator must be placed on both supports the same time to avoid leaving the operator suspended by only one of the supports.
To make the task easier, you should unlock the operator in order to be able to stretch / retract arm easily (see page 03.B), to get the correct position for supports.



05 - Test movement

▷ Install the pins removed earlier on each place with a small amount of lubricant for less friction.
▷ Move the door manually to see if the door opens and closes uniformly and correctly, without any irregular friction during its entire travel;
This will ensure that operator is not subjected to problems during operation.



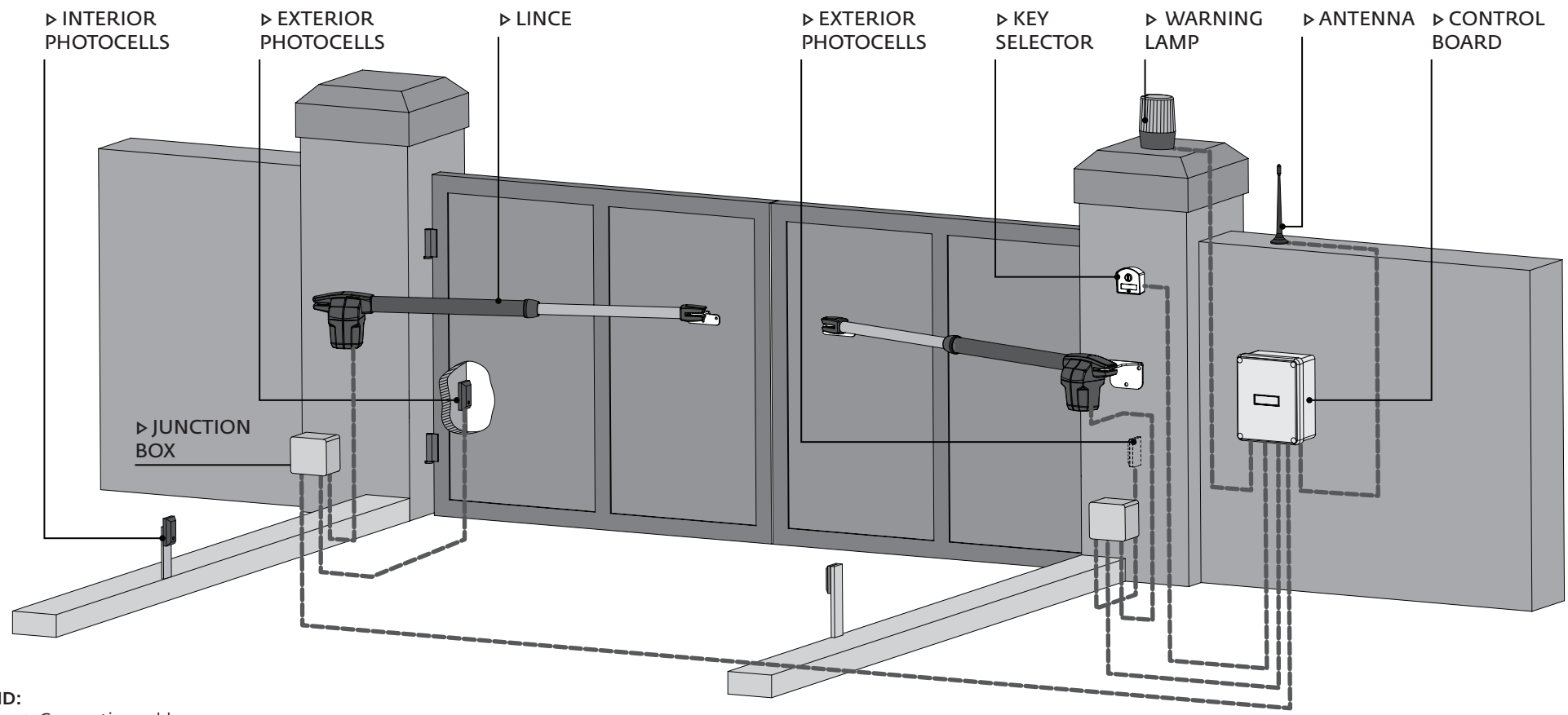
06 - Connecting operator to control board and configuring control devices.

▷ With the operator installed, connect it to control board for system configuration (see control board user manual).
Must also configure the desired control devices (transmitters, wall switch, etc.) and other additional components such as antenna, warning light, key selector, among others.

⚠ **It is important to respect this installation order!**
Otherwise, it is not possible to ensure correct installation and operators may not work properly!

04. INSTALLATION

▷ INSTALLATION MAP



LEGEND:

▷ Connection cables

It is important to use mechanical stoppers in the opening and closing position of the gate. If not respected, components of the automation may suffer efforts for which they were not prepared, and as a result will be damaged.

It is important to use junction boxes for connections between motors, components and control unit. All cables must enter and exit on the bottom of the junction and control board box.

05. TROUBLESHOOTING

▷ FINAL CONSUMERS INSTRUCTIONS | INSTRUCTIONS FOR SPECIALIZED INSTALLERS ◁

Anomaly	Procedure	Behavior	Procedure II	Discovering the origin of the problem
▷ Motor doesn't work at all	▷ Make sure you have 230V power supply connected to operator and if it is working properly.	▷ Still not working	▷ Consult a qualified MOTORLINE technician.	1 ▷ Open control box and check if it has 230V power supply; 2 ▷ Check input fuses; 3 ▷ Disconnect motors from control board and test them by connecting directly to power supply in order to find out if they have problems (see page 09.A). 4 ▷ If the motors work, the problem is on the control board. Pull it out and send it to our MOTORLINE technical services for diagnosis; 5▷ If the motors doesn't work, remove them from installation site and send to our MOTORLINE technical services for diagnosis.
▷ Motor doesn't move but makes noise	▷ Unlock motor and move gate by hand to check for mechanical problems on the gate.	▷ Encountered problems?	▷ Consult an experienced gate expert	1 ▷ Check all motion axis and associated motion systems related with gate and operators (pins, hinges, etc.) to find out what is the problem.
		▷ Gate moves easily?	▷ Consult a qualified MOTORLINE technician.	1 ▷ Check capacitors, testing operator with new capacitors; 2 ▷ If capacitors are not the problem, disconnect motors from control board and test them by connecting directly to power supply in order to find out if they have problems (see page 09.A). 3 ▷ If the motors work, the problem is from control board. Pull it out and send it to our MOTORLINE technical services for diagnosis; 4 ▷ If the motors doesn't work, remove them from installation site and send to our MOTORLINE technical services for diagnosis.
▷ Motor opens but doesn't close	▷ Unlock motor and move gate by hand to closed position. Lock motor(s) again and turn off power supply for 5 seconds. Reconnect it and send order to open gate using transmitter.	▷ Gate opened but didn't close again	1 ▷ Check if there is any obstacle in front of the photocells; 2 ▷ Check if any of the control devices (key selector, push button, video intercom, etc.) of the gate are jammed and sending permanent signal to control unit; 3 ▷ Consult a qualified MOTORLINE technician.	All **MOTORLINE** control boards have LEDs that easily allow to conclude which devices are with anomalies. All safety devices LEDs (DS) in normal situations remain On. All "START" circuits LEDs in normal situations remain Off. If LEDs devices are not all On, there is some security systems malfunction (photocells, safety edges), etc. If "START" circuits LEDs are turn On, there is a control device sending permanent signal. **A) SECURITY SYSTEMS:** 1 ▷ Close with a shunt all safety systems on the control board (check manual of the control board in question). If the automated system starts working normally check for the problematic device. 2 ▷ Remove one shunt at a time until you find the malfunction device . 3 ▷ Replace it for a functional device and check if the operator works correctly with all the other devices. If you find another one defective, follow the same steps until you find all the problems. **B) START SYSTEMS:** 1 ▷ Disconnect all wires from START terminal input. 2 ▷ If the LED turned Off, try reconnecting one device at a time until you find the defective device. **NOTE:** In case procedures described in sections **A)** and **B)** don't result, remove control board and send to our technical services for diagnosis.
▷ Motor doesn't make complete route	▷ Unlock motor and move gate by hand to check for mechanical problems on the gate.	▷ Encountered problems?	▷ Consult an experienced gate expert	1 ▷ Check all motion axis and associated motion systems related with gate and operators (pins, hinges, etc.) to find out what is the problem.
		▷ Gate moves easily?	▷ Consult a qualified MOTORLINE technician.	1 ▷ Check capacitors, testing with new capacitors; 2 ▷ If capacitors are not the problem, disconnect motors from control board and test them by connecting directly to power supply in order to find out if they are faulty ; 3 ▷ If the motors doesn't work, remove them from installation site and send to our MOTORLINE technical services for diagnosis. 4 ▷ If motors work well and move gate at full force during the entire course, the problem is from controller. Set force using trimmer on the board. Make a new working time programming , giving suffient time for opening and closing with appropriate force (see manual of the controller in question) 5 ▷ If this doesn't work, remove control unit and send it to MOTORLINE technical services services. **NOTE**: Setting force of the controller should be sufficient to make the gate open and close without stopping, but should stop with a little effort from a person. In case of safety systems failure, the gate shall never cause physical damaged to obstacles (vehicles, people, etc.).

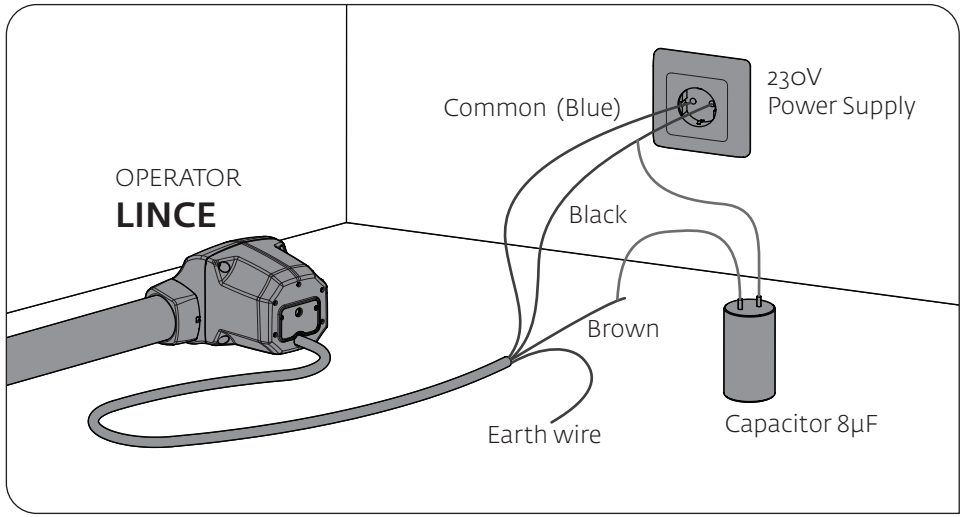
06. COMPONENTS TEST

▷ CAPACITORS CONNECTION SCHEME

To detect which components have problems on an automated system, sometimes it is necessary to conduct tests using a direct connection to a 230V AC power supply. For this it is necessary to merge a 8µF capacitor to make the operator to work.
In the diagram below is shown how this link should be made and how to merge the different wires of the components.

NOTES:

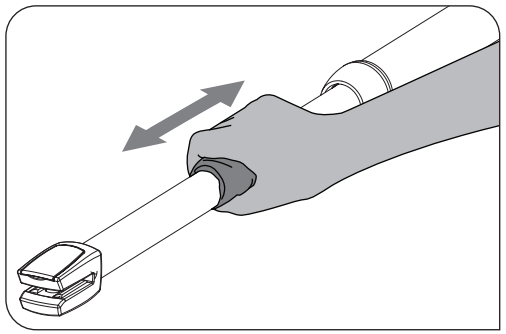
▷ To perform these tests you don't need to remove operator from where it is installed, because this way you can know if connected directly to power supply it will work correctly.
▷ The order of wiring capacitor to motor wires is not important, as long you connect one wire to Brown wire of motor and the other one to Black wire of motor;
▷ Common wire should always be connected to power supply.
▷ To reverse motor direction, just replace Black wire with Brown wire of the operator on the power supply.



All tests must be performed by qualified personnel due to serious danger associated with the misuse of electrical systems!

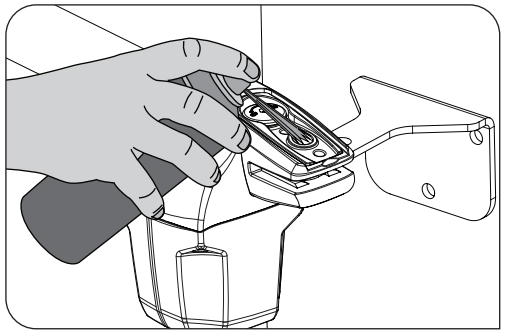
07. MAINTENANCE

MAINTENANCE ◁



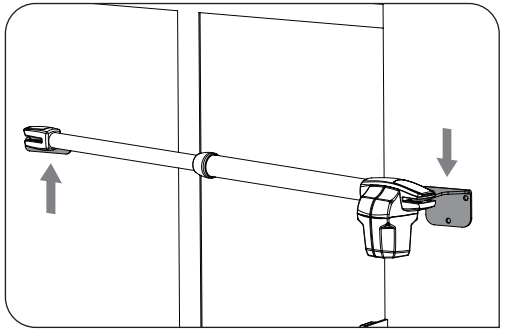
▷ Clean stainless steel arm

▷ With a cloth soaked in lubricant spray, wipe any residue that accumulates on the operator's stainless steel arm.
▷ Apply a small amount of spray lubricant on the arm and using a dry cloth remove the excess, leaving a homogeneous layer of lubricant over the arm.



▷ Lubricate pins

▷ Remove front and rear caps
▷ Place a small amount of lubricant on the holes that contains support pins.
▷ Install caps on the respective holders.



▷ Check motor supports

▷ Make sure that supports remain well fixed on the pillars and gate to ensure proper functioning of the equipment.

These maintenance measures must be applied every year in order to insure proper functioning of the automated system.

08. CONTROL BOARD MC2

▷ CONNECTIONS SCHEME